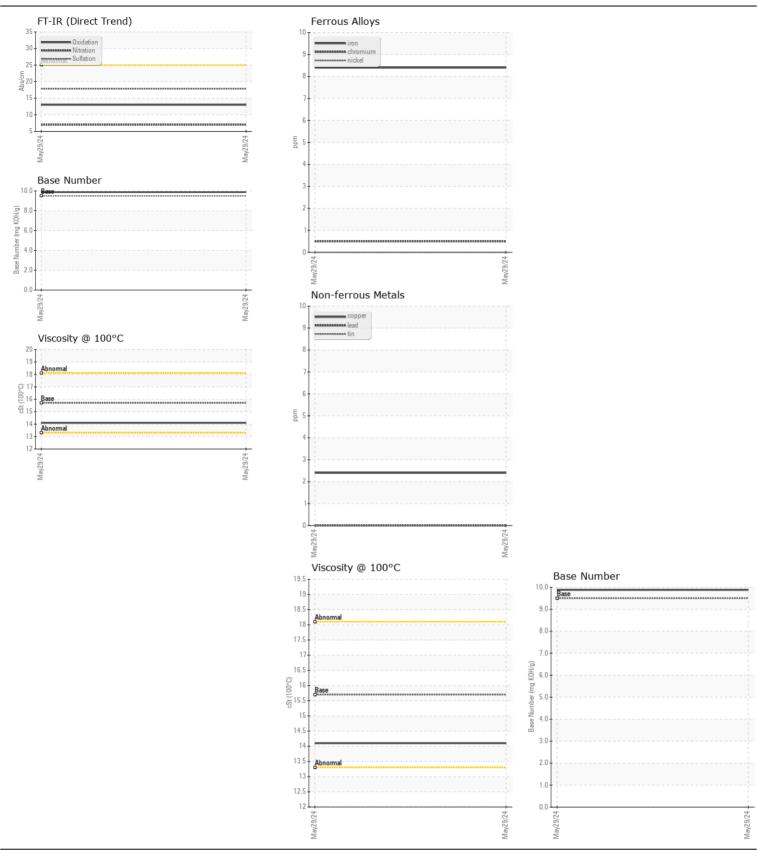
WEAR CONTAMINATION **FLUID CONDITION**

NORMAL NORMAL NORMAL

Thunder Machine Id

7420078
Component
Starboard Main Engine
Fluid

TUXTON HD SYNTHETIC BLEND 15W40 (38 LT	ΓR)						
RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Resample at the next service interval to monitor.	Sample Number		Client Info		WC0834822		
	Sample Date		Client Info		29 May 2024		
	Machine Age	hrs	Client Info		500		
	Oil Age	hrs	Client Info		500		
	Filter Age	hrs	Client Info		500		
	Oil Changed		Client Info		Changed		
	Filter Changed		Client Info		Changed		
	Sample Status				NORMAL		
WEAR	Iron	ppm	ASTM D5185(m)	>75	8		
All component wear rates are normal.	Chromium	ppm	ASTM D5185(m)	>8	<1		
	Nickel	ppm	ASTM D5185(m)	>2	0		
	Titanium	ppm	ASTM D5185(m)	>3	0		
	Silver	ppm	ASTM D5185(m)	>2	<1		
	Aluminum	ppm	ASTM D5185(m)	>15	1		
	Lead	ppm	ASTM D5185(m)	>18	0		
	Copper	ppm	ASTM D5185(m)		2		
	Tin	ppm	ASTM D5185(m)	>14	0		
	Vanadium	ppm	ASTM D5185(m)		0		
CONTAMINATION	Silicon	ppm	ASTM D5185(m)	>20	8		
	Potassium	ppm	ASTM D5185(m)		<1		
There is no indication of any contamination in the oil.	Fuel		WC Method		<1.0		
	Water		WC Method	>0.1	NEG		
	Glycol		WC Method		NEG		
	Soot %	%	ASTM D7844*		0.1		
	Nitration	Abs/cm	ASTM D7624*	>20	7.0		
	Sulfation	Abs/.1mm	ASTM D7415*	>30	17.8		
	Emulsified Water	scalar	Visual*	>0.1	NEG		
FLUID CONDITION	Sodium	ppm	ASTM D5185(m)	>75	2		
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.	Boron	ppm	ASTM D5185(m)		25		
	Barium	ppm	ASTM D5185(m)		<1		
	Molybdenum	ppm	ASTM D5185(m)		72		
	Manganese	ppm	ASTM D5185(m)		<1		
	Magnesium	ppm	ASTM D5185(m)		488		
	Calcium	ppm	ASTM D5185(m)		1570		
	Phosphorus	ppm	ASTM D5185(m)		988		
	Zinc	ppm	ASTM D5185(m)		1148		
	Sulfur	ppm	ASTM D5185(m)		2875		
	Oxidation	Abs/.1mm	ASTM D7414*	>25	13.0		
	Base Number (BN)	mg KOH/g	ASTM D2896*	9.5	9.88		
	Visc @ 100°C	cSt	ASTM D7279(m)	15.7	14.1		





CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No.

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 : WC0834822 Lab Number : 02643597 Unique Number : 5801136 Test Package : MAR 2

Received **Tested** Diagnosed

: 24 Jun 2024 : 25 Jun 2024

: 25 Jun 2024 - Wes Davis

Niagara City Cruises (Hornblower) 5775 River Road Niagara Falls, ON CA L2G 3K9

Contact: Evan Dubblestyne evan.dubblestyne@cityexperiences.com T: (519)373-4663

To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

F: x: